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10/786,721	02/24/2004	Daniel Yap	B-4664NP 621523-9	2756

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EXAMINER	
LEUNG, WAI LUN	
ART UNIT	**PAPER NUMBER**
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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/786,721	YAP, DANIEL	
	Examiner	Art Unit	
	Wai Lun Leung	2613	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *30 March 2007*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-28,30-35 and 37* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☒ Claim(s) *26-28 and 33-35* is/are allowed.

6)☒ Claim(s) *1-17,24,30,31 and 37* is/are rejected.

7)☒ Claim(s) *18-23,25 and 32* is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date *20070820*.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Claim Rejections - 35 USC § 102

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

2. Claim 1, 6, and 11 are rejected under 35 U.S.C. 102(b) as being anticipated by **Mizrahi et al.** *(US006341025B1)*.

Regarding to claim 1, **Mizrahi** discloses a multi-wavelength photonic oscillator *(fig 2A)* comprising: (a) a plurality of lasers *(transmitter 20, fig 2A)* each emitting light at a different frequency *(λ_1, λ_2, λ_3,.... λ_n, fig 2A)*; (b) an optical wavelength multiplexer *(30, fig 2A)* for combining the light emitted by the plurality of lasers at an output thereof as a set of optical wavelengths *(40, fig 2A)*; and (c) an optical modulator *(50, fig 2A)* arranged in a feedback loop and coupled to receive light at the output of the optical wavelength multiplexer *(as shown in fig 2A)*, the feedback loop further including: (i) an optical tap *(221, fig 5)* for coupling at least a subset of said set of optical wavelengths to at least one optical output of the multi-wavelength photonic modulator *(col 14, ln 31-45)*; (ii) at least one optical channel having an associated photodetector *(231, fig 5)* arranged to receive light from the optical tap via the at least one optical channel *(col 14, ln 43-ln 45)*; and (iii) an electronic loop portion coupled to receive output from the at least one associated photodetector and to provide an input for the optical modulator *(col 14, ln 43-57)*.

As to claim 6, **Mizrahi** further teaches wherein the optical tap is wavelength sensitive for directing light of a wavelength associated with a frequency of one of the lasers of said plurality of lasers into said feedback loop and for directing light of wavelengths associated with frequencies of other ones of the lasers of said plurality of lasers to said at least one optical output of the multi-wavelength photonic modulator *(col 14, ln 17-57; fig 5).*

As to claim 11, **Mizrahi** further teaches wherein said feedback loop includes a plurality of parallel-arranged optical channels *(161, 165, fig 2B)* and wherein the optical tap is wavelength sensitive for directing light of wavelengths associated with frequencies of said plurality of lasers each into different ones of optical channels of said feedback loop *(col 10, ln 43-61).*

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

The factual inquiries set forth in *Graham* **v.** *John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

Furthermore, the key to supporting any rejection under 35 U.S.C. 103 is the clear articulation of the reason(s) why the claimed invention would have been obvious. The Supreme Court in *KSR*

International Co. v. Teleflex Inc. note that the analysis supporting a rejection under 35 U.S.C. 103 should be made explicit. The Court quoting *In re Kahn* 441 F.3d977,988,78 USPQ2d1329,1336(Fed.Cir.2006) stated that "[R]ejections on obviousness cannot be sustained by mere conclusory statements; instead, there must be some articulated reasoning with some rational underpinning to support the legal conclusion of obviousness."

4. Claims 2, 7, and 12 are rejected under 35 U.S.C. 103(a) as being unpatentable over **Mizrahi et al.** *(US006341025B1)*, in view of **Desurvire** *(US006556322B1)*.

Regarding claims 2, 7, and 12, **Mizrahi** discloses the apparatus in accordance to claims 1, 6, and 11 as discussed above. **Mizrahi** does not disclose expressly wherein the feedback loop has a plurality of optical channels with one optical channel imposing more delay than another optical channel with each associated photodetector in the plurality of optical channels having an output combined at a common electrical output for connection to said electronic loop portion.

Desurvire, from the same field of endeavor, teaches an apparatus having a plurality of optical channels *(F3, F4, F5, F6, fig 1)* with one optical channel imposing more delay than another optical channel *(delay 115, 116, 117, 118, fig 1)* with each associated photodetector *(119-122, fig 1)* in the plurality of optical channels having an output combined at a common electrical output for connection to an electronic loop *(col 5, ln 7-12)*. Therefore, it would have been obvious for a person of ordinary skill in the art at the time of invention to implement **Mizrahi's** feedback loop with a plurality of optical channels with one optical channel imposing more delay than another optical channel with each associated photodetector in the plurality of optical channels having an output combined at a common electrical output for connection to said electronic loop portion as suggested by **Desurvire**. The motivation for doing so would have been to be able to effectively identify the channels that contains optical signals *(Desurvire, col 4, ln 23-34)*.

5. Claims 3-5, 8-10, and 13-17 are rejected under 35 U.S.C. 103(a) as being unpatentable over **Mizrahi et al.** *(US006341025B1)*, in view of **Desurvire** *(US006556322B1), as applied to claims 2 and 7 above,* and further in view of **Applicant's admitted prior art**.

Regarding claims 3, 8, and 13, **the combination of Mizrahi and Desurvire** discloses the apparatus in accordance to claims 2 and 7 as discussed above. **Mizrahi** further teaches wherein at least one of an optical portion of the loop and the electronic loop portion includes an amplifier to ensure a loop gain for the feedback loop *(col 10, ln 17-27).* **The combination** does not disclose expressly wherein the loop gain for the feedback loop is ensured to exceed unity. **However applicant admitted** that it is common and well known to have at least one of an optical portion of the loop and the electronic loop portion includes an amplifier to ensure that a loop gain for the feedback loop exceeds unity *(page 2, ln 1-7 of spec).* Therefore, it would have been obvious for a person of ordinary skill in the art at the time of invention to ensure the loop gain for the feedback loop in the combination of **Mizrahi and Desurvire**'s system to exceed unity as it is common and well known. The motivation for doing so would have been to have a stabled feedback control system.

As to claims 4, 9, and 15, **Desurvire** further teaches wherein at least one of the optical portion of the loop and the electronic loop portion includes phase shifting means *(123, fig 1).*

As to claims 14 and 16, **Mizrahi** further teaches wherein each optical channel in the optical portion of the loop has an optical amplifier *(52, fig 2A and fig 5).*

As to claims 5, 10, and 17, **Desurvire** further teaches wherein the input for the optical modulator is an electronic input *(input to optical gates 127-130 are electronic inputs R1-4, fig 1; col 4, ln 58-60).* The combination of **Mizrahi and Desurvire** does not expressly teaches

wherein the electronic loop portion includes a bandpass filter. However, **Desurvire** teaches wherein the electronic loop portion includes electronics that validates the available channel, and "any other combination of type of gate producing the required logic function could be used" *(col 4, ln 54-55)*. Therefore, it would have been obvious for a person of ordinary skill in the art to use a bandpass filter, or electronic gates that are functionally equivalent to a bandpass filter, onto **the combination of Mizrahi, Desurvire, and Applicant's admission**, such that a wavelength channel of a particular passband could be verified as suggested by **Desurvire**.

6. Claims 24 and 31 are rejected under 35 U.S.C. 103(a) as being unpatentable over **Shimonaka** *(US005548434A)*, in view of **Scarr et al.** *(US4601027)*.

Regarding claims 24 and 31, **Shimonaka** discloses an apparatus *(fig 7)* comprising: (a) optical modulators *(66, fig 7)* for modulating optical local oscillator signals *(30, fig 7)*; (b) photodetectors *(35, fig 7)* coupled to outputs of the optical modulators; and (c) an apparatus for generating the optical local oscillator signals *(30, fig 7)*.

Shimonaka does not disclose expressly wherein the photodetectors are for converting the modulated optical local oscillator signals to an electrical intermediate frequency or baseband signal or electrical radio frequency signals for subsequent processing, or the apparatus for generating the optical local oscillator signals comprising: (i) multi-wavelength photonic oscillator; and (ii) a wavelength division demultiplexer coupled to an optical output of the multi-wavelength photonic oscillator, said wavelength division demultiplexer separating the optical output into more than one wavelength region with the optical output at each wavelength region comprising at least an optical carrier and a modulation sideband, the output at each wavelength region being suitable for determining a local oscillator frequency.

Scarr, from the same field of endeavor, teaches an apparatus *(fig 2)* for generating the optical local oscillator signal, comprising: (i) multi-wavelength photonic oscillator *(Master oscillator)*, said multi-wavelength photonic oscillator producing an optical output comprising multiple optical carriers and multiple modulation sidebands, said multiple optical carriers and multiple modulation sidebands being grouped into more than one wavelength region with the optical output at each wavelength region comprising at least an optical carrier and modulation sideband *(fig 1, "frequency allocations" in optical region, with optical carrier f1, f2, f3, fn and their respective side-band as shown)*; and (ii) a wavelength division demultiplexer *(RNM1, fig 2)* coupled to an optical output of the multi-wavelength photonic oscillator, said wavelength division demultiplexer separating the optical output of the multi-wavelength photonic oscillator into more than one of said wavelength region *(f_0-1000MHz, f_0-500MHz, f_0, f_0+500MHz, f_0+1000MHz, fig 2),* with the optical output at each wavelength region comprising at least an optical carrier and a modulation sideband *(fig 1),* the output at each wavelength region being suitable for determining a local oscillator frequency *(col 3, ln 29-54)*; and photodetectors *(detectors fig 2)* for converting the modulated optical local oscillator signals to an electrical intermediate frequency or baseband signal for subsequent processing *(col 3, ln 62-col 4, ln 4)*

Therefore, it would have been obvious for a person of ordinary skill in the art at the time of invention to apply **Scarr's** teachings onto **Shimonaka**'s system, such that **Shimonaka's** local oscillator comprises an apparatus such as that of **Scarr's** for generating multiple wavelength regions comprising at least an optical carrier and a modulation sideband, suitable for determining a local oscillator frequency as suggested by **Scarr**. The motivation for doing so would have

been to be able to afford a relatively expensive oscillator with good spectral line width *(Scarr, col 3, ln 2-8)*.

7. Claims 30 and 37 are rejected under 35 U.S.C. 103(a) as being unpatentable over **Shimonaka** *(US005548434A)*, in view of **Scarr et al.** *(US4601027), as applied to claims 24 and 31 above,* and further in view of **Mizrahi et al.** *(US006341025B1)*.

Regarding claims 30 and 37, **the combination of Shimonaka and Scarr** discloses the apparatus in accordance to claims 24 and 31 as discussed above. **It** does not disclose expressly wherein the multi-wavelength photonic oscillator comprises: (1) a plurality of lasers each emitting light at a different frequency; (2) an optical wavelength multiplexer for combining the light emitted by the plurality of lasers at an output thereof as a set of optical wavelengths; and (3) an optical modulator arranged in a feedback loop and coupled to receive light at the output of the optical wavelength multiplexer, the feedback loop further including: an optical tap for coupling at least a subset of said set of optical wavelengths to at least one optical output of the multi-wavelength photonic modulator; at least one optical channel having an associated photodetector arranged to receive light from the optical tap via the at least one optical channel; and an electronic loop portion coupled to receive output from the at least one associated photodetector and to provide an input for the optical modulator. **Mizrahi**, from the same field of endeavor, teaches the multi-wavelength photonic oscillator as discussed above regarding claim 1. Therefore, it would have been obvious for a person of ordinary skill in the art at the time of invention to use **Mizrahi**'s multi-wavelength photonic oscillator as discussed above regarding claim 1 onto **the combination of Shimonaka and Scarr**'s system as suggested by **Mizrahi**.

The motivation for doing so would have been to enable a feedback loop such as that of **Mizrahi's** to stabilize the oscillation frequency of the multi-wavelength photonic oscillator.

Response to Arguments

8. Applicant's arguments filed 3/30/2007 have been fully considered but they are not persuasive.

9. In response to applicant's remarks regarding rule 37 C.F.R. §1.56(b) pertaining to the treatment of the numerous IDS cited by applicant. As previously indicated, each of the excessive number of references listed on the numerous IDS has been briefly considered in the time allotted for examination of the patent application in accordance to **MPEP 609**. Applicant is advised of Claims and Continuations Rules change as published in the Federal Register on August 21, 2007, effective November 1, 2007. These rule changes address many of applicant's concern on reply filed 3/30/2007. Information on the new rules is available at http://www.uspto.gov.

10. In response to applicant's argument regarding claims 1, 6, and 11, that "Examiner mistakenly identifies element 50 show in Figures 2 and 5 of Mizrahi as being an optical modulator", where applicant insist "Element 50 is not an optical modulator, rather it is an optical amplifier. And an optical amplifier is not an optical modulator!" Examiner respectfully disagree, since it is common engineering design knowledge that an optical amplifier can inherently be used as an optical modulator. Specifically, Mizrahi expressly teaches such usage of the "optical amplifier" element 50 as a modulator, as stated in column 10, lines 17-42, where he teaches

> **"the amplifier modules include a microprocessor** for monitor and control of various amplifier functions such as optical signal gain (in conjunction with optional optical taps positioned before the first stage of the amplifier and after the second stage of the amplifier), pump powers, pump wavelengths, etc. As with the microprocessors of the laser transmitters, **the amplifier microprocessors communicate with node control**

> **processors 140**; through the node control processors, information from other parts of optical system 10 can be communicated to the amplifier module, as set forth below.
>
> In the first east-west amplifier depicted in FIG. 2 the service channel is input onto the optical transmission path by service channel modem 160. **Service channel modem 160 receives the information (e.g., telemetry information) to be placed on the service channel from node control processor 140. Service channel modem 160 includes a directly-modulated laser source at 1625 nm for creating a modulated optical signal.** Suitable optical sources for use in the service channel modem are commercially available from EG&G. The outgoing service channel is output onto optical path 163 which terminated at interconnection element 80 such that the multilayer interference filter 82 **reflects the channel towards the second stage 54 of optical amplifier 50, thereby multiplexing the service channel optical signal with the payload wavelength division multiplexed optical signal.**"

Therefore, Mizrahi in deed uses optical amplifier 50 to modulate the optical signal onto the optical transmission line, and therefore functionally equivalent to an optical modulator.

11. In response to applicant's argument regarding claims 1, 6, and 11, that the references fail to show certain features of applicant's invention, it is noted that the features upon which applicant relies (i.e., the feedback signal is used to control its modulator) are not recited in the rejected claim(s). Although the claims are interpreted in light of the specification, limitations from the specification are not read into the claims. See *In re Van Geuns*, 988 F.2d 1181, 26 USPQ2d 1057 (Fed. Cir. 1993).

Applicant's assertion that the feedback signal is being used to control its laser is correct, however, the laser in turns "provide an input for the optical modulator" as a part of the feedback loop is explicitly illustrated in *(fig 2A, 2B, and 5)*, and therefore reads on the limitation as claimed.

12. In response to applicant's argument regarding claims 6, that Mizrahi's optical tap is not wavelength selective, while pointing out that wavelength selectivity is in deed performed by grating 25 and by grating 222-225. It is respectfully submitted that the process of optical tap in

Mizrahi's disclosure is in deed wavelength sensitive for directing light of a wavelength associated with a frequency of one of the lasers of said plurality of lasers into said feedback loop as claimed. The optical tap 221, together with the grating 25 and/or grating 222-225 is functional equivalent to an optical tap that is wavelength selective as claimed.

13. In response to applicant's argument regarding claim 11, that the references fail to show certain features of applicant's invention, it is noted that the features upon which applicant relies (i.e., the optical tab as being separate from the modulator) are not recited in the rejected claim(s). Although the claims are interpreted in light of the specification, limitations from the specification are not read into the claims. See *In re Van Geuns*, 988 F.2d 1181, 26 USPQ2d 1057 (Fed. Cir. 1993).

Applicant's assertion that the interference filter 82 could function as wavelength selective optical tap is correct, and that channels 161 and 165 are coupled therefrom. However, applicant argues that "the feedback path connected to channels 161, 165 is used to control the laser 22 and not an optical modulator". It is again noted that the laser in turns "provide an input for the optical modulator" as a part of the feedback loop, and therefore reads on the limitation as claimed.

14. In response to applicant's argument regarding claims 2, 7, and 11, that Desurvire is nonanalogous art, it has been held that a prior art reference must either be in the field of applicant's endeavor or, if not, then be reasonably pertinent to the particular problem with which the applicant was concerned, in order to be relied upon as a basis for rejection of the claimed invention. See *In re Oetiker*, 977 F.2d 1443, 24 USPQ2d 1443 (Fed. Cir. 1992). In this case, Mizrahi teaches optical channels such as *(fig 2b, 161, 165)* being configured as a feedback loop

through service channel modem 162 and 164 and node control processor 142. Mizrahi does not expressly teaches service channel modem or node control processor imposes a delay onto the optical channels. Desurvire teaches a method of imposing more delay on one optical channel than another optical channel using an electrical similar to a service channel modem or node control processor such as that of Mizrahi's. Therefore, it would have been obvious for a person of ordinary skill in the art at the time when the invention was made to recognize the known improvement technique such as that of **Desurvire's** could have applied in the same way to **Mizrahi's** base device and the results of imposing more delay on one optical channel than another would have been predictable to one of ordinary skill in the art. Therefore, the rationale of use of known technique (**Desurvire's**) to improve similar methods (**Mizrahi's**) in the same way has been clearly articulated herein with the *Graham* inquiries and findings as presented above. *In re Nilssen* 851 F.2d 1401, 7 USPQ 2d 1500 (Fed.Cir.1988) at 1403, 7 USPQ2d at 1502, the court found "it would have been obvious to one of ordinary skill in the art to use the threshold signal produced in the USSR device to actuate a cutoff switch to render the inverter inoperative as taught by Kammiller." That is, using the known technique of a cut off switch for protecting a circuit to provide the protection desired in the inverter circuit of the USSR document would have been obvious to one of ordinary skill.

15. In response to applicant's argument regarding claims 3, 8, and 13, applicant assert that amplifier module 50 is not a part of the feedback loop, examiner disagrees. Figure 2A explicitly illustrates a feedback loop, obtaining optical tap from 82, as signal 163, processed by service channel modem 160, sends signal to node control processor 140, which controls the plurality of transmitters, which in turns sends input signal thru optical combiner 30 and optical line 40 to

amplifier module 50, which also acts as a modulator in accordance to signals from node control processor 140. The signal within amplifier module 50 pass thru element 56, pumped by laser 53, amplified by amplifier stage 52, then tapped by element 80 and wavelength selected by 82, parts of the signals go back into the feedback loop via 163 and then the process repeats. Such basic understanding of a feedback loop as explicitly illustrated in Mizrahi's Figure 2A was thought to be easily understood by a person of ordinary skill in the art. Detailed explanation of such common engineering knowledge is beyond the scope of an office action.

16. In response to applicant's argument regarding claims 14 and 16, applicant points out that elements 52 and 54 (instead of 53) are optical amplifier stages in amplifier module 50 in figure 2A, Examiner thank applicant for pointing out the typographical error. As discussed above, these elements are part of the feedback loop, and since optical amplifier stages is functionally equivalent to optical amplifiers, Mizrahi's disclosure reads on the limitations as claimed.

17. In response to applicant's argument regarding claims 5, 10, and 17, applicant fails to understand how multiple logic gates (which may also be optical) such as that of Desurvire's, may operate, with a the proper logic configurations (such as digital delay elements commonly known as z^{-1}, and the proper gain control) in the time domain may result in band-pass filter. Figure 11.31 and Page 788-789 of Digital Signal Processing by Mitra is cited herein as requested by the applicant. Such teachings of performing band-pass filtering by logic gates using digital signal processing technique, which may also be applied to optical logic gates, was thought to be easily understood by a person of ordinary skill in the art. Detailed explanation of such common engineering knowledge is beyond the scope of an office action.

18. In response to applicant's argument regarding claims 24 and 31, applicant argues that Scarr's modulator is a different kind of modulator and produces different results than applicant's invention. However, it is respectfully submitted that Scarr's disclosure reads on applicant's invention as claimed. Applicant is reminded that during patent examination, USPTO personnel are to give claims their broadest reasonable interpretation in light of the supporting disclosure. *In re Morris*, 127 F.3d 1048, 1054-55, 44 USPQ2d 1023, 1027-28 (Fed. Cir. 1997). Limitations appearing in the specification but not recited in the claim should not be read into the claim. *E-Pass Techs., Inc. v. 3Com Corp.*, 343 F.3d 1364, 1369, 67 USPQ2d 1947, 1950 (Fed. Cir. 2003) (claims must be interpreted "in view of the specification" without importing limitations from the specification into the claims unnecessarily). *In re Prater*, 415 F.2d 1393, 1404-05, 162 USPQ 541, 550-551 (CCPA 1969). See also *In re Zletz*, 893 F.2d 319, 321-22, 13 USPQ2d 1320,1322 (Fed. Cir. 1989) ("During patent examination the pending claims must be interpreted as broadly as their terms reasonably allow.... The reason is simply that during patent prosecution when claims can be amended, ambiguities should be recognized, scope and breadth of language explored, and clarification imposed.... An essential purpose of patent examination is to fashion claims that are precise, clear, correct, and unambiguous. Only in this way can uncertainties of claim scope be removed, as much as possible, during the administrative process."). see **MPEP § 2106**.

19. In response to applicant's argument regarding claims 30, 37, 3, 8, and 13, In response to applicant's argument that the references fail to show certain features of applicant's invention, it is noted that the features upon which applicant relies (i.e., the feedback loop having a loop gain that exceeds unity) are not recited in the rejected claim(s). Although the claims are interpreted in

light of the specification, limitations from the specification are not read into the claims. See *In re Van Geuns*, 988 F.2d 1181, 26 USPQ2d 1057 (Fed. Cir. 1993).

In response to applicant's argument that "having a loop gain exceeds unity makes such a loop unstable and oscillate", the fact that applicant has recognized another advantage which would flow naturally from following the suggestion of the prior art cannot be the basis for patentability when the differences would otherwise be obvious. See *Ex parte Obiaya*, 227 USPQ 58, 60 (Bd. Pat. App. & Inter. 1985).

Allowable Subject Matter

20. Claims 18-23, 25, and 32 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

21. Claims 26-28, and 33-35 are allowed over prior art.

Conclusion

22. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event,

however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Wai Lun Leung whose telephone number is (571) 272-5504. The examiner can normally be reached on 11:30am-9:00pm Mon-Thur.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jason Chan can be reached on (571) 272-3022. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

September 18, 2007
DWL

JASON CHAN
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